



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,859	07/09/2003	Yasuo Inoue	29284/598	8149

7590 11/06/2006

KENYON & KENYON
Suite 700
1500 K Street, N.W.
Washington, DC 20005

EXAMINER

CHEN, ALAN S

ART UNIT	PAPER NUMBER
----------	--------------

2182

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/614,859	Applicant(s) INOUE, YASUO	
	Examiner Alan S. Chen	Art Unit 2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED FINAL ACTION

Response to Arguments

1. Applicant's arguments based on the amendment submitted 09/11/2006 with respect to claims 1 and 3-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 3-18 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 5,369,751 to Kambayashi et al. (*Kambayashi*).

4. Per Claim 1, Kambayashi discloses a storage system (*Fig. 3*) comprising: a channel unit (*Fig. 3, element 3*) that transfers data sent from an upper-level system (*Fig. 1, element 1, host/ CPU*) and transfers data to said upper-level system (*Fig. 3, CPU transfers data to/from channel unit*), a cache unit (*Fig. 3, element 41*) which is coupled to said channel unit (*Fig. 3, cache unit coupled to channel unit through upper-rank interface controller, elements 43 and 44*) and in which data sent from said channel unit is stored (*Fig. 4 show data that is transferred from channel unit is stored in cache memory*); a plurality of control units that is coupled to said cache unit, and transfers or

Art Unit: 2182

receives data to or from said cache unit (*Fig. 3, element 45 and 46 transfers and receives data from cache unit, element 41*); a disk device that stores data written under control of each of said plurality of control units (*Fig. 3, elements 45 and 46*); a plurality of paths (*Fig. 3, various paths between various units*), a first one of said paths coupling said cache unit to a first one of said control units (*Fig. 3, path directly from element 41 to element 45*), a second one of said paths coupling said cache unit to a second one of said control units (*Fig. 3, path directly from element 41 to element 46*), a third one of said paths coupling said cache unit to said channel unit (*Fig. 3, path goes from cache memory, element 41 to elements 43 and 3*); at least one first processor (for controlling transfer to and from the cache unit of data which is transferred from said upper-level system and received at and transferred from said channel unit (*Fig. 4, element 434*); and at least one second processor for controlling said cache unit to transfer data to said disk device (*Fig. 4, element 455*), said third one of said paths not intersecting with said first one of said paths or said second one of said paths, except for an endpoint connecting said third one of said paths to said cache unit (*each cited path in Fig. 3 is independent of each other*).

5. Per Claims 3-10 and 12, Kambayashi discloses Claim 1, further disclosing the paths being distinct and not shared with each other (*Fig. 3*). Thus, each are dedicated, independent, direct, point-to-point and signal line type paths.

6. Per Claim 11, Kambayashi discloses Claim 1, further disclosing said disk device includes a plurality of disk drives (*Fig. 3, disk unit appears to be part of a plurality of disk*

units connected in parallel on a bus), and plurality of control unit are connected to said plurality of disk drives (Fig. 3, elements 45 and 46 accesses all the disk units).

7. Per Claim 13, Kambayashi discloses Claim 1, further disclosing said plurality of paths are used to write data, of which writing is requested by said upper-level system, from said cache unit to said disk device, and used to communicate data, of which writing is requested by said upper-level system, from said cache unit to said plurality of control units (*Figs. 5-8 show paths used for reading writing data to/from cache and disk units*).

8. Per Claim 14, Kambayashi discloses Claim 1, further disclosing said plurality of paths are used to read data, of which reading is requested by said upper-level system, from said disk device, and are used to communicate data, of which reading is requested by said upper-level system, from said control unit to said cache unit (*Figs. 5-8 show paths used for reading writing data to/from cache and disk units*).

9. Per Claims 15-18, Kambayashi discloses Claim 1, further disclosing two processors (*Fig. 4, element 434 and 455*) that control functions of the channel unit (*Fig. 3, element 3*) and control unit (*Fig. 3, elements 45 and 46*).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

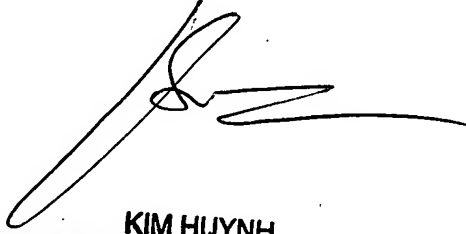
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2182

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASC
11/1/2006


KIM HUYNH
SUPERVISORY PATENT EXAMINER
11/01/06